*Pris*MET™ Metallurgical Microscope

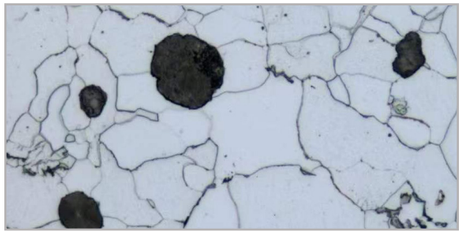
Advanced Contrast Imaging For Materials Analysis

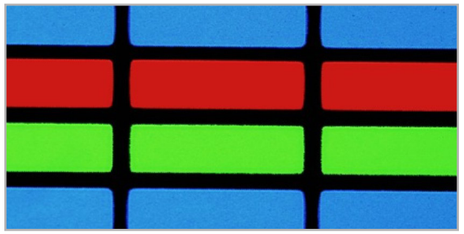
Reveal surface structure, grain boundaries, and micro-features with exceptional clarity using brightfield, darkfield, oblique illumination, and optional polarization and DIC.

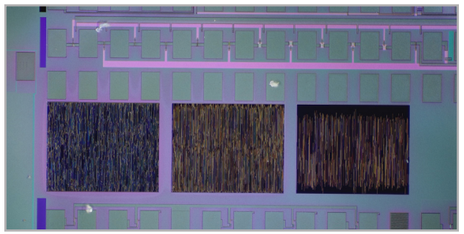


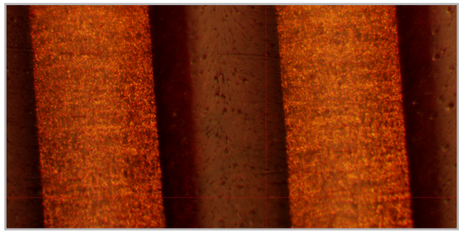
Metallurgical Microscope
CAT# 14500

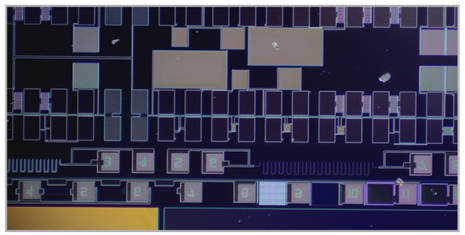
Flexible. Streamlined. Ergonomic.











The *Pris*MET Metallurgical Microscope from UNITRON is engineered to deliver precise, high-contrast imaging for demanding materials science and metallurgical applications. Designed for the examination of metals, alloys, coatings, and engineered surfaces, the *Pris*MET provides the advanced illumination techniques required to reveal fine microstructural details with clarity and confidence.

- Supporting reflected brightfield, darkfield, and oblique illumination, the *Pris*MET enables users to visualize surface topology and micro-features that are often difficult to detect with conventional microscopy. Optional reflected and transmitted polarization expands analytical capabilities for examining crystalline structures and stress patterns within materials. For applications requiring even greater contrast, optional reflected-light DIC enhances the visibility of subtle surface variations and grain boundaries.
- With the added flexibility of transmitted brightfield illumination, the *Pris*MET also accommodates thin or semi-transparent specimens, providing a versatile platform for a wide range of laboratory and industrial materials analysis tasks.
- Enhance Your Analysis with Metrical™ Image Analysis. UNITRON's Metrical software adds powerful quantitative analysis to the *Pris*MET microscope. With over 14 specialized measurement tools — including grain size, porosity, and hardness evaluation — it turns images into actionable data. Designed for metallurgical and materials science applications, Metrical streamlines workflows and ensures reliable, standards-compliant results.
- Energy-efficient LED illumination system provides optimal sample illumination and, unlike halogen, eliminates color temperature variability with intensity adjustments.

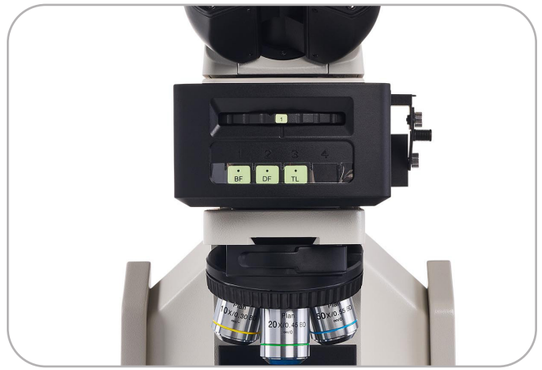


Packed With Features

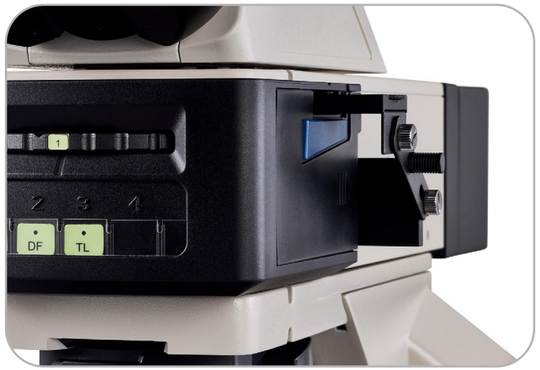
UNITRON's *Pris*MET industrial metallurgical microscope delivers exceptional images for materials science, metal manufacturing, metallurgy, fabrics/textiles, wafers, optoelectronics, composites and microelectronics.

The *Pris*MET provides brightfield, darkfield, polarized light and oblique contrast methods to accommodate a wide variety of applications. Featuring semi-APO BF/DF optics, ergonomic design, and digital capabilities, *Pris*MET is an outstanding and cost-effective choice for today's modern materials scientist.

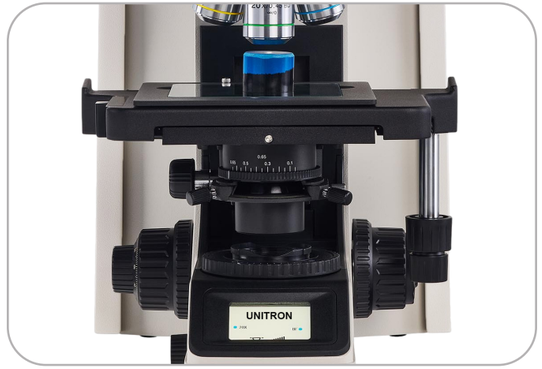




The reflected light illuminator comes preconfigured for Brightfield, Darkfield and Oblique illumination providing versatile contrast techniques for examining surface structures and micro-features.



Optional polarization components enable detailed examination of crystalline structures, grain boundaries, and stress patterns in materials. Easily engage reflected or transmitted polarization for enhanced analytical capability.



Smooth, ergonomic stage controls allow precise positioning of samples for efficient scanning and detailed inspection, and are located near the focus knobs for ergonomic comfort.



The trinocular head supports visual observation and digital imaging, making the system ready for documentation, analysis, and collaboration.



A convenient front-mounted LCD screen displays the active illumination mode and objective magnification in real time. Users can also adjust illumination brightness and color temperature directly from the interface for optimized viewing conditions.



The *Pris*MET features a 30mm focus range to accommodate a variety of sample sizes up to 45mm tall.



Built-in hand grip in the back and the front add stability for positioning the *Pris*MET on the bench. The *Pris*MET includes a 3mm hex wrench, conveniently stored on the back panel.

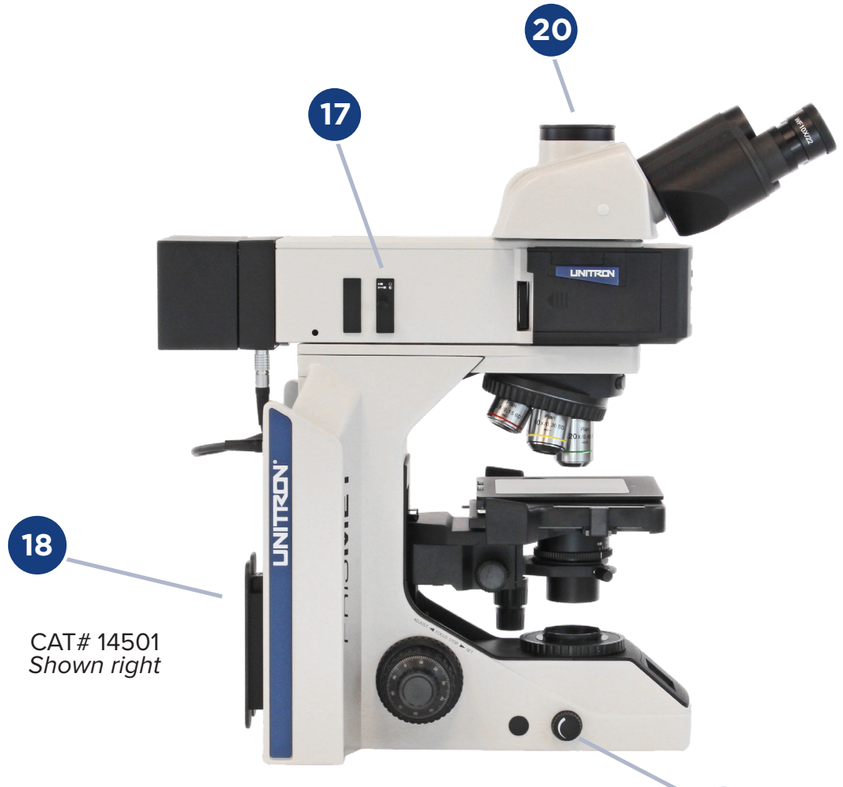


The *Pris*MET includes power cord wrap for reduced benchtop clutter and convenient storage.

Key Features



CAT# 14500
Shown above



CAT# 14501
Shown right

1. WF 10x/22mm eyepieces
2. Standard binocular/trinocular viewing head with imaging port
3. Adjustable, centerable aperture and field diaphragms
4. 3w reflected LED
5. Coaxial coarse and fine focus wth torque adjustment
6. X-Y stage controls
7. Finger grip position *(additional grip position on back)*
8. Multi-function LCD panel
9. Field diaphragm
10. 3w transmitted LED
11. Abbe condenser
12. Rackless mechanical stage with glass insert
13. Standard semi-APO 5x, 10x, 20x, 50x BF/DF objectives, optional 100x
14. Coded quintuple nosepiece, DIC slider slot
15. Reflected illumination turret with BF, DF, TL positions
16. Optional polarizer and rotatable analyzer
17. Oblique illumination slider
18. Cord wrap
19. Multi-function light intensity adjustment knob
20. Optional binoular/trinocular viewing head with imaging port (100:0, 80:20, or 0:100 split)

PRISMET™
METALLURGICAL MICROSCOPE

UNITRON®

Specifications

Optical System	Infinity, color-corrected optical system; f = 200mm
Viewing Head	Trinocular viewing head, 30° inclined, 360° rotating, switchable light distribution 0%:100% binocular/trinocular *Optional: Trinocular viewing head, 30° inclined, 360° rotating, switchable light distribution 0%:100% binocular/trinocular, 100%:0% binocular/trinocular, or 80%:20% binocular/trinocular*
Eyepieces	WF10x/22mm with diopter adjustment and eye cushions, accepts reticle
Objectives	Plan S-APO BF/DF 5x, 10x, 20x, 50x objectives; optional 100x objective
Nosepiece	Encoded quintuple nosepiece; slot for DIC slider
Condenser	0.65 NA Abbe condenser
Frame	Cast aluminum alloy with coaxial coarse and fine focus; Programmable LCD provides llumination status and control, and objective position
Illumination	Reflected: Encoded 3-position turret (BF, DF, TL positions), oblique illumination slider, 3W LED illumination, Köhler adjustable Transmitted: 3W LED illumination, adjustable color temperature, Köhler adjustable
Stage	Rackless, double layer mechanical stage, transmitted and reflective dual-use glass stage insert
Optional Accessories	Reflected light polarizer/analyzer set Transmitted light polarizer (requires reflected light polarizer/analyzer set) DIC slider Digital cameras C-mount adapters: 0.5x, 1.0x Filters: blue, green, yellow Reticles: Crossline, grid, Austenite grain size and custom patterns are available Stage micrometers: (Metric (mm) and Imperial (inches) with NIST traceability are available

METRICAL
METALLURGICAL & MATERIALS ANALYSIS



METRICAL Metallurgical & Materials Analysis Software *(sold separately, CAT# 14625-USB)* provides computer-aided quantitative analysis results in accordance with ISO and ASTM technical standards.

- **Grain Size:** ASTM E-112, E-930, E1181, ISO 643-03, JIS G 0551-05 BS 490 DIN 643-03, IS-4748-88, SIS 111101 GOST 5639-82
- **Non-Metallic Graphite:** ASTM E-1245 E ASTM E45-97, ISO 4163-82, DIN 50602
- **Decarburization:** ASTM E1077, ISO 3887, JIS-0557-98 BS-6617, IS-7754 DIN 50192
- **Porosity:** ASTM 247
- **Dendrites and Hardness analysis (Brinell and Vickers)**
- **Live measurement**

Streamlines image capture, measurement and enhancement, live measurement and accuracy of results. Includes modules for Grain Size, Porosity, Segmentation, Decarburization, SG Iron / Nodularity, Gray Iron, Carbide banding, and more.

Camera included: *includes 5MP, USB 3.0 camera. Requires c-mount adapter (sold separately). Compatible with Windows 10 or higher. See Metrical brochure for PC requirements.*

Metrical software shown on a computer monitor (not included) with included 5MP USB 3.0 camera, and c-mount adapter (sold separately).

UNITRON®
73 Mall Drive • Commack, NY 11725 • 631-543-2000 (P)
Email: info@unitronusa.com • www.unitronusa.com

CE ISO 9001:2015 ISO 14001:2015 c UL us LISTED RoHS